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Mining

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February, 1961

Volume 38, No. 2

rugged equipment for tough jobs...



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A-5082A

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The most ruggedly built machinery, engineered and manufactured for a lifetime of hard use *when new* will still be the best in comparison with other *make used* equipment of the same age and job history. The *best* is what you get with Caterpillar... used or new.

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There must be a reason why contractors, coal strippers and other earthmoving equipment users have been Beckwith customers *since 1907*. Perhaps it's the reputation we have built as a reliable organization that stands behind its claims. Perhaps it is because of our well-planned facilities which enable us to do a better job at most reasonable cost. Or maybe it is due to the special training we give our personnel so that they can properly serve you. All these plus factors result from our *unmatched years of experience*.

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Our "Bonded Buy" and "Certified Buy" written guarantees are your assurance that used machinery is *exactly as represented*. We carefully inspect and rebuild as necessary with genuine Cat parts to insure performance and dependability. The written guarantee is backed by a performance bond.

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Introduction of new and more powerful machines by Caterpillar recently has resulted in a record number of trade-ins on *late-model* Cat machines as well as *older* units. Our Used Equipment Manager, *Walt Coldren*, also makes sure that there is a good selection of *other brand* models in a wide range of conditions to meet almost any budget.



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T. H. Tyson
Credit Manager

*Look to Beckwith for the Best Buys
in Used Equipment . . as well as New!*



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COAL MINING

Vol. XXXVIII February, 1961 No. 2

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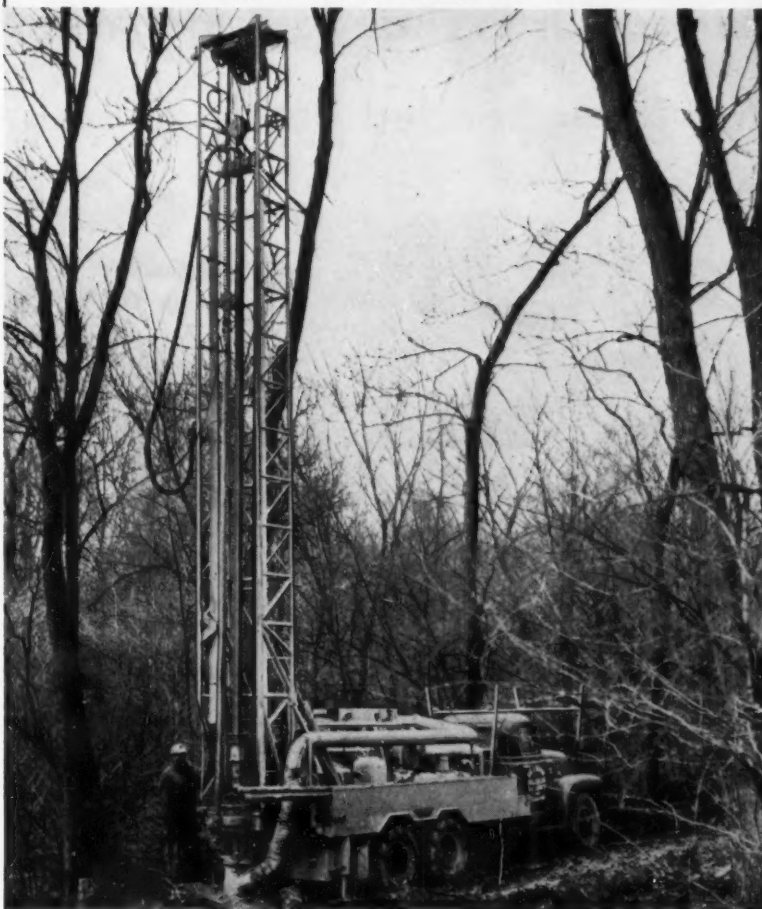
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Working in the woods, it is drilling 300 ft. holes.



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Davey Rotary Drills are faster in and out of blast holes . . . move rapidly between holes. They cut blasting costs . . . increase effectiveness of blasts . . . speed overburden removal.

. . . these are just a few of many reasons why more and more leading mine operators and coal drilling contractors are standardizing on Davey.

Available in 8 air blast, mud pump or combination models, Davey drills are either truck or crawler tractor mounted. Rated capacities to 3,500 ft.

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Write for Bulletin E-702S

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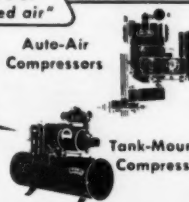
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Beckwith's Caterpillar Exchange Parts Assemblies Are Now Bonded Buys!

PARTS ASSEMBLY Guarantee Bond

Know All Men by these Presents,

that _____ (hereinafter called Seller),
of _____ (hereinafter called Buyer)
is held and firmly bound unto _____

in the sum of not exceeding the lesser of FIVE THOUSAND DOLLARS (\$5,000.00) or Seller's price,
with respect to each parts assembly described below, for the payment of which Seller hereby binds
itself, its successors and assigns by these presents.

The Condition of this Obligation is such that Whereas Seller has sold to Buyer the below-described
parts assembly or assemblies originally manufactured by Caterpillar Tractor Co. and reconditioned
in accordance with practices recommended by Caterpillar Tractor Co.:

DESCRIPTION	PART NUMBER	SERIAL NUMBER	SALE PRICE

And Whereas Seller guarantees each said parts assembly against unsatisfactory performance due to
defective material or workmanship for _____ days after the date of sale shown
below (herein referred to as the guarantee period), the obligation under this guarantee being only to
repair or replace, as Seller may elect, any said assembly which proves defective in material or work-
manship under conditions of normal use during the guarantee period at Seller's expense (including
cost of all necessary materials and labor) up to a maximum of the lesser of Five Thousand Dollars
(\$5,000.00) or Seller's price, with respect to each said assembly, except that the cost, if any, of trans-
porting each said assembly from and to Seller's place of business shall be paid by the Buyer.

Now, Therefore, if Seller, its successors and assigns shall in all respects well and truly perform the obli-
gation under the guarantee recited above, then this obligation shall be void; otherwise to remain in
full force and effect.

THE ABOVE GUARANTEE IS VOID, AND SELLER SHALL BE UNDER NO OBLIGATION
THEREUNDER, IF CLAIM IS NOT MADE TO THE SELLER WITHIN THREE (3) DAYS
AFTER DISCOVERY OF THE DEFECT UPON WHICH THE CLAIM IS BASED.

No guarantee is made or authorized to be made by Seller other than that above set forth.

Date of sale and issuance: _____, 1960



By _____
The foregoing parts assembly guarantee bond is secured by a master
guarantee of LUMBERMENS MUTUAL CASUALTY COMPANY, Chicago, Illinois.

THE MASTER GUARANTEE BOND WILL NOT APPLY IF THE GUARANTEE
PERIOD IS FOR LESS THAN 30 DAYS OR MORE THAN 90 DAYS FROM DATE
OF SALE.

Notice of claim under such master guarantee bond must be made in
writing to the branch office of LUMBERMENS MUTUAL CASUALTY
COMPANY located at 301 South Adams Street, Peoria, Illinois, within
sixty (60) days after expiration of the guarantee period. See reverse of
this instrument for copy of supporting master guarantee bond.

VALID ONLY IF ISSUED DURING 1960.

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Q. What is a Bonded Buy Parts Assembly?

Answer: Reconditioned Caterpillar parts assemblies are stocked for your convenience in making speedy replacements of worn items. Beckwith has always guaranteed Caterpillar assemblies rebuilt in our service centers. Now we further back up our company guarantee with a bond. This is the same familiar and trusted Bonded Buy you've seen on the very highest quality Cat used equipment. If one of Beckwith's rebuilt assemblies should prove defective within 90 days, it will be replaced at no cost for the part. (Of course, if you want a Caterpillar-trained mechanic to make the replacement, standard service rates would apply.) A \$5,000 guarantee bond, issued by Lumbermens Mutual, is your protection that rigid Caterpillar-recommended practices have been followed in reconditioning and that only genuine Caterpillar parts have been used.



Lobby display at Clarksburg, W. Va. Service Center shows representative exchange parts.

Q. How does the plan work?

Answer: You order the guaranteed parts assembly you need from any of Beckwith's six conveniently located parts departments. Merely install the reconditioned item and go back to work immediately. Beckwith will take your worn assembly and rebuild it to Caterpillar Bonded Buy specifications for the next user.

Q. How does it save money?

Answer: First of all, you pay only for the materials and workmanship required to bring your own assembly back to A-1 shape. No overtime charges . . . no unnecessary parts . . . no unnecessary labor. Then, too, you are getting a specialist-rebuilt Caterpillar parts assembly for your old one. You are sure that only long-lived Cat components have been used. This means longer parts life in the future because of trouble-free performance. Ordinarily, savings of the Bonded Buy assembly will run from 20 to 50 per cent of the cost of a new parts assembly.

Let us tell you how the Beckwith Bonded Buy Parts Assembly Exchange program will fit your particular requirements. Since our stock is constantly growing, check with us for the exact assembly you need.

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"A full load on the blade can be carried without lugging down," says W. N. McMillan, foreman and operator for Mays Coal Company of Clarion, Pa. "The operator runs the TD-25—it doesn't run him."

International TD-25 is used to strip overburden and backfill after coal is removed. Fingertip control reduces operator fatigue, increases operator safety.

"MORE WORK WITH PLANET POWER STEERING"

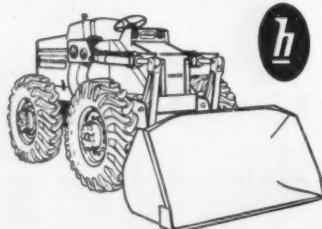
New International TD-25 works at one of several bituminous coal stripping operations for Mays Coal Company of Clarion, Pa. Here 38 feet of overburden is being removed to uncover a 24 to 42 inch seam. A Hough HM Payloader is used to clean the coal.

The new TD-25 replaces a TD-24 that had been in use for 9 years in this operation. Mr. W. N. McMillan, foreman and operator says, "The International TD-25 is faster—the 817 engine makes the big difference. It responds quickly and is economical on fuel. Quick response of the 817 engine with its terrific power output enables the operator to work with minimum changing of gears."

"The tractor has ideal speeds for all work conditions. Planet powered steering means a full load on the turns, no nosing-in on banks, and more work with less operator fatigue."

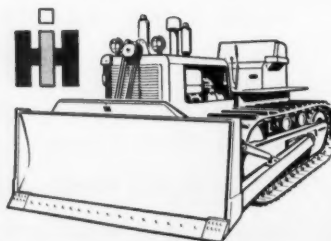
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Do You Know?

● The nation's polluted waters are "a disgrace," Surgeon General Leroy E. Burney told delegates at the first National Conference on Water Pollution.

Dangerous pollutants cited by Dr. Burney include sewage, chemicals that kill microbes but may be toxic to humans or fish, ionizing radiations, lead from agricultural sprays and auto exhausts.

The Federal Government has been concerned about dirty water since 1913, Dr. Burney said. Today its main research center, The Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio, has teams of experts working on freezing water supplies from viruses and bacteria, detergents, insecticides and radioactive contaminants.

They also have developed a pilot sewage treatment procedure suitable for housing subdivisions beyond reach of city sewer systems.

The Public Health Service, Dr. Burney said, has 75 stations where interstate waters are sampled. PHS also keeps tabs on how many facilities are dirtying the water, how many are cleaning it up and how much it is costing the taxpayer.

When pollution in one state endangers another, the Surgeon General and the Secretary of Health, Education and Welfare can take action to abate pollution. Thirteen enforcement actions have been taken, and only one case, in St. Joseph, Mo., has required Federal court action.

In calling for cooperation, Dr. Burney said, "the most fundamental responsibility of all rests at the source . . . with the municipalities and industries concerned. Clearly too, the states must continue to be keystones of our pollution control efforts. Historically, legislatively and logically the strength of the state agency is a major determinant of success in pollution abatement."

Among the questions facing us are those of what type research is most pressing; how much money it will take; and where the money will come from.

We need answers to such questions as what new tests will tell whether water in a stream is safe; what should be the national policy on the utilization of streams for waste disposal; how much should be spent on pollution control, as apart from research; what proportions should be paid by state, local and Federal governments; how these costs compare with the costs of neglect; and finally, who will pilot the program and who will enforce the agreements when responsibilities are not met.

● By 1980 the United States and Canada will need twice as much industrial raw material as they now use. Because of this high rate of consumption, these

HERE AND THERE IN THE COAL INDUSTRY

● Congress can relieve economic distress in many surplus labor areas by freeing the coal industry of "competitive inequities" and enabling it to operate in a "more wholesome business climate," a Senate subcommittee was informed.

In testimony submitted to the Banking and Currency subcommittee studying area redevelopment legislation, Stephen F. Dunn, president of the National Coal Association, said that a "reasonable" cut-back in residual oil and prohibition of dump sales of natural gas in industrial markets offer a means for many coal communities "now suffering the pangs of depression to recover quickly and to establish a basis for long-range business progress."

Mr. Dunn pointed out that an upturn in coal output would bring "simultaneous improvement" in conditions in coal freight rail centers and in communities that produce supplies and equipment for mines and transportation facilities.

countries can no longer be classified as surplus materials areas, stated Wilbert G. Fritz of the U. S. Office of Civil and Defense Mobilization in a special report prepared for the Canadian-American Committee.

During the next 20 years, the United States and Canada will become more dependent upon each other for sources of industrial raw materials. The United States will import more iron ore, natural gas and nickel from Canada, and Canada will depend upon the United States for more coal, molybdenum and phosphate.

In addition to the transfer of raw materials across the border, both countries will also rely more heavily on overseas sources of supply.

● Tuberculosis can be eliminated in the United States through drug treatment.

Dr. Edward T. Blomquist, chief of the tuberculosis branch, division of special health services, U. S. Public Health Service, today called for coordination between public health agencies and communities to stamp out TB.

"Today's depressed conditions in coal regions are widespread," Mr. Dunn said. "They extend into communities of every producing state, and in many cases the economy of the entire state is involved."

"These is no mystery as to how these unfavorable conditions originated or why they have persisted."

Mr. Dunn then presented tables showing sustained increases in residual oil imports, which reached a high of 230 million barrels — equivalent to 55 million tons of coal in energy value — in 1960. Dump natural gas, sold to industrial consumers at from one third to one half the price charged to householders, cost the coal industry at least 30 million tons last years, he stated.

"If the coal industry were given an opportunity to regain markets taken away by unfair competitive practices," Mr. Dunn declared, "the major problems of many communities now categorized as surplus labor areas would be automatically solved."

Eradication of tuberculosis means killing the tubercle bacilli in persons now suffering from the active disease and in those who previously had TB and were inadequately treated. The proper dosage of appropriate drugs, such as isoniazid, over a period of time will make it impossible to communicate the disease to others and will lessen the possibility of recurrence in the patient.

Because the death rate for tuberculosis has declined enough so that many TB hospitals have been closed, Dr. Blomquist said that the public has interpreted this situation as evidence that tuberculosis services in general can be cut back.

Public health departments are in difficulty on this account, but Dr. Blomquist said that intercounty cooperation enabling the State Health Department to work out a state plan for TB treatment might be a solution.

"The amount of direct service or financial assistance the state gives is not an issue," he said. "Any State Health Department should be able to serve in a coordinating capacity."

Dr. Blomquist's report appears in the current Public Health Reports (Nov.).

Strip at a Profit

with a Page

where other machines lost money

Let us send you records of such results —

Where Page Walkers made a losing job profitable — other cases where the owners made big increases in their profits on operations which were already making money.

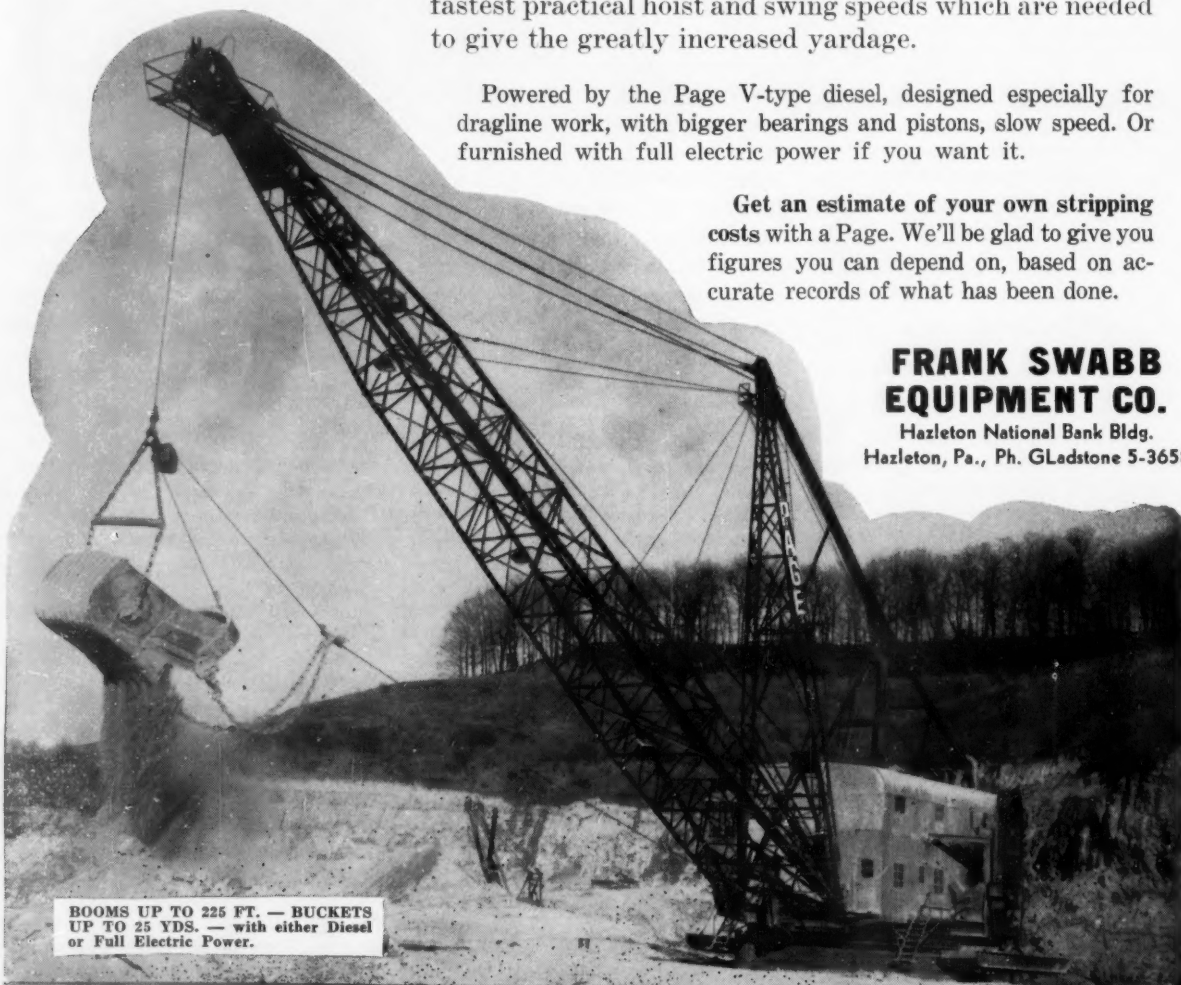
Page Draglines consistently out-perform slower machines in every kind of digging. And are built extra strong, are real work-horse machines that can stand up with the fastest practical hoist and swing speeds which are needed to give the greatly increased yardage.

Powered by the Page V-type diesel, designed especially for dragline work, with bigger bearings and pistons, slow speed. Or furnished with full electric power if you want it.

Get an estimate of your own stripping costs with a Page. We'll be glad to give you figures you can depend on, based on accurate records of what has been done.

FRANK SWABB EQUIPMENT CO.

Hazleton National Bank Bldg.
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BOOMS UP TO 225 FT. — BUCKETS
UP TO 25 YDS. — with either Diesel
or Full Electric Power.

For High Production and Lowest Operating Costs --
PAGE WALKING DRAGLINES

"OFF WITH HIS HEAD!"

by Ernest W. Fair

● That was the order of the Queen of Hearts in Alice in Wonderland issued right and left whenever someone made a mistake or committed an error. It's an attitude many an employer pursues when an employee makes a mistake, and while the quickest remedy is always to dismiss the individual it is far from the most satisfactory one in handling employee mistakes.

When an employee in a coal company scraps valuable supplies or breaks an expensive piece of equipment it is time to resist that "Off With His Head" impulse and hold an investigation into the causes of the accident. Such an investigation should take into consideration the previous record of the person involved and be directed toward remedying a possible recurrence of the same thing by another employee.

When an employee makes a mistake here are some of the factors that should be considered before placing blame or passing judgement toward punishment.

Be Sure Where the Fault Lies — The more skilled and experienced the individual the less apt he will be to make costly errors. In such cases the fault may lie elsewhere in the business with either an individual, materials or a method of doing the job. There may have been other contributing factors such as distraction from someone else, "horse play" by some other individual or even malicious planning by some other jealous employee.

Was Bad Maintenance To Blame — Many an accident is caused by nothing more than faulty maintenance of building or equipment catching up and someone just happened to be present when it occurred. Despite all of the maintenance education in business today lack of good preventative maintenance is still a major contributing factor to accidents everywhere. We never

save money cutting corners on maintenance.

Most Employees Profit by Mistakes — Making mistakes from infancy is the chief manner in which most of us learn good and bad procedure. It applies as well with one of our employees as it does with the year-old youngster in our home. With most employees an error or mistake is a lesson well learned and has made them much more valuable to the company.

Is the Individual Mistake Prone? — There are thousands of people in this world working at all kinds of jobs because they have a natural bent for doing the wrong thing at the most important time. Such an individual is of little value in any spot where his errors can cause expensive damage. He is one type it is well to either remove from the payroll or shift into a position where this natural bent will not cause damage of any consequence.

Working Conditions Cause Employee Mistakes — Where mistakes and errors occur again and again the chances are it is not so much the individual employees who are at fault as it is the general working conditions under which they perform their jobs. Bad lighting where they work, uncomfortable temperature conditions, poor supervision, lack of proper primary training and many other such factors are known to contribute to employee mistakes and errors in almost all fields of business. Where mistakes occur too often it is a good idea to make a thorough investigation in search of such causes rather than place the blame on the individuals involved.

Avoid Pressures on Employees — When we are forced to do anything under pressure our efficiency falls sharply. When employees have threats of dire punishment hanging over their heads they are much less

apt to do a good job than where they know understanding and consideration are present. Any time we seek to secure more work output from the individual through pressure of time or threats (or even reward in some cases) we are asking for an increase in accidents, mistakes and errors.

Reprisals Seldom Work — When we seek to teach an employee a lesson for his error by a forced layoff or other reprisal it accomplishes little toward avoiding such future errors by the individual. Such procedures may work with children but they are resented by adults.

Were Proper Instructions Given? — Oftentimes such mistakes are caused not by the individual doing something on his own but by his following too precise or too general instructions from someone "higher up." Instructions should always be clear and to the point and as detailed as possible, for the one thing that seems obvious to us and not worthy of mention may be unknown to the employee and result in his making a serious mistake.

Health is a big factor — Our top efficiency is seldom present when we are in below-par health either physically or mentally. Many an employee error made under such conditions would not have been made otherwise. If an individual can be spared it is far better that he be at home resting than on the job making mistakes. If he cannot, then job shifts for a day or so to a spot where top mental and physical alertness are not needed can avoid such errors.

Were There Outside Contributing Factors — All was going smoothly in a plant when suddenly a jet bomber roared over the building. The suddenness of the unexpected nerve-shattering noise caused six minor accidents in that plant. In a
(continued on page 20)



The world's largest Diesel Walking Dragline which has been especially built for this job. The V-6 Diesel engine, the Twin V-6 Diesel engines were developed exclusively for dragline work. The Dual Hitch Automatic Dragline bucket is also a new development.

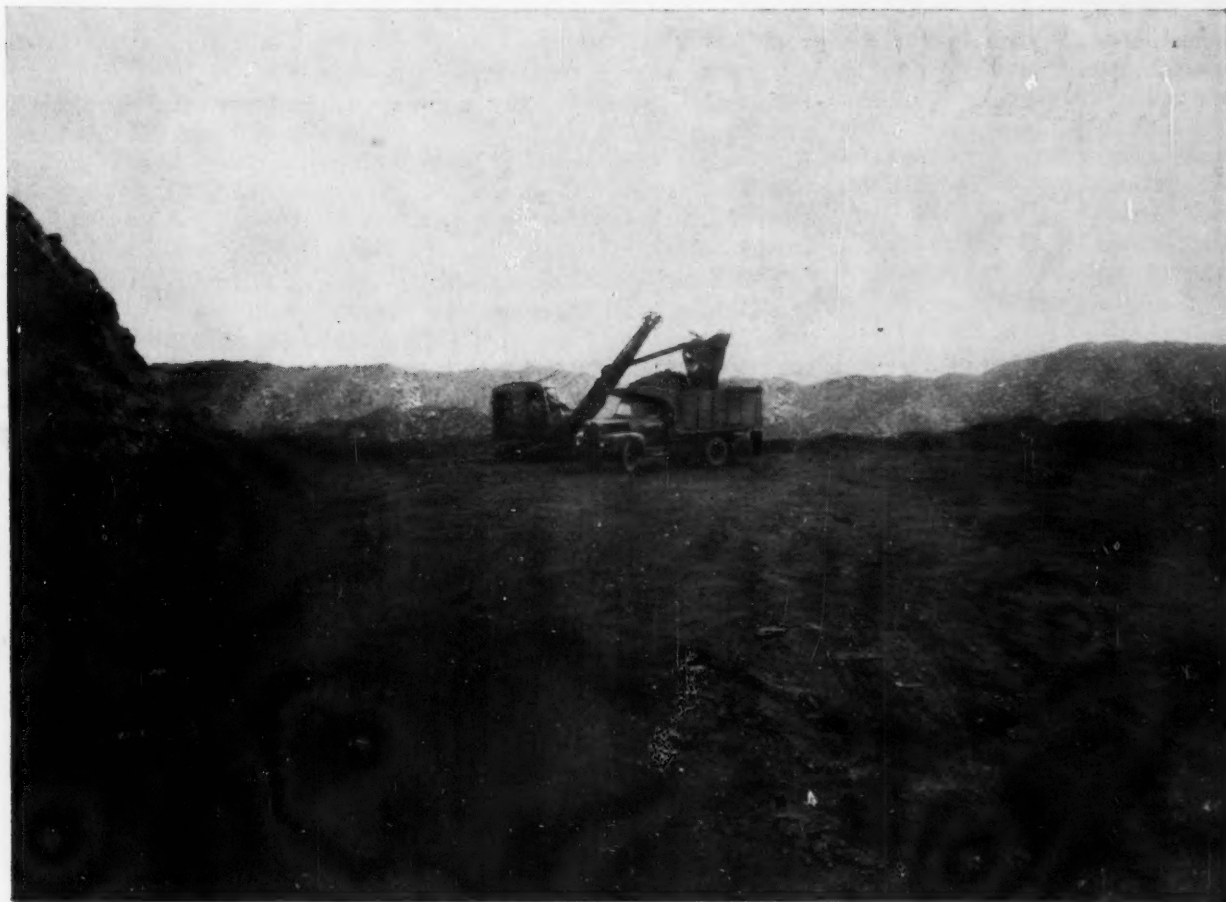
World's Largest Diesel Dragline at Hoffman Coal Co.



Overall view of the storage bin, conveyor and the preparation plant.

Stripping two seams of coal at Carthus, Clearfield County, Pennsylvania, the Hoffman Coal Company is using the world's largest Diesel Driven Walking Dragline. This is a Model 732 Page Dragline with 200 foot boom and 16 yard bucket. Two Caterpillar D-9 tractors are also used in the stripping operation.

The seams of being stripped are the Central Pennsylvania "C" Prime, the top seam on the proper-



Loading out coal from the upper seam.

ty, runing 24 inches thick and the Miller "D" seam, runing 28 inches thick.

Cover on both seams is mostly hard rock that must be drilled and blasted for moving. Blast holes are made with a 6-inch Davey drill.

Stripped coal is loaded into trucks with a Bucyrus-Erie Model 22-B shovel.

A new 150-tons per hour Heavy-Meia coal washing plant has recently been installed.



Davey Blast Hole Drill working in overburden on the lower seam.

● General Electric has engineered a new line of low-priced lightweight, compact two-way radios for use in the mining industry.

Kent J. Worthen, national mobile radio sales manager for GE's Communication Products Department, said 15-watt units are now in quantity production at the company's Lynchburg, Va., plant. They will be marketed immediately under the name "GENERAL ELECTRIC PACER" and will sell for \$419.



The product will be a boon, Worthen said, for prospective two-way radio users eligible in business radio markets — small local companies where price is important and large manufacturers where the savings per unit can effect substantial economies on large fleet purchases.

Designed for operation in low band (27-50 mc.) and high band (150-174 mc.), the units have full-quality VHF-FM audio. These are the two bands most widely sought by commercial firms obtaining licenses from the Federal Communications Commission.

The GE Pacer has 15 tubes and 2 transistors. When the 15-watt unit is "on", battery drain is 4.2 amperes. This is a full ampere less than 10-watt tubed units now available in the industry. Thus, the new equipment provides more power and more communications range with less battery drain. Special generators and heavy duty batteries are not needed.

The control section contains a transistorized power supply adaptable to 12-volt negative or positive ground electrical systems. This eliminates vibrators, getting rid of a major maintenance problem in

tubed mobile radio equipment and contributing to greater reliability.

The new design is the smallest in GE's entire line of two-way communication units. It is smaller than the company's Transistorized Progress Line models, which are the most compact transistorized sets on the market.

The General Electric Pacer model is 4 $\frac{1}{4}$ inches high, 7 $\frac{3}{4}$ inches wide and 12 $\frac{1}{2}$ inches long, a total of 412 cubic inches. Miniaturized with installation in compact cars in mind, it was designed to fit under the dash of the newer, smaller vehicles now marketed, without cramping passengers.

Lightweight, aluminum construction is used. The GE Pacer weighs only 10 pounds, including a newly-designed microphone and built-in speaker. This is less weight than transistorized vehicular two-way radio equipment currently marketed.

While circuits are simplified, several new components are used to achieve greater reliability. A new filter in the receiver lowers susceptibility to ignition noise, resulting in quieter communications with better voice quality.

The unit is completely American made and uses American components. Among new components are two new miniature tubes with 13.6 V. heaters, designed for mobile radio operation and not yet marketed elsewhere in the communications industry.

● The A. T. Green Machinery Company is pleased to announce that Mr. Michael G. Holleran has become associated with the company as Service Manager. Mr. Holleran is well known in the Heavy and Industrial Construction Industries for his many years of service with the Booth and Flinn Company of Pittsburgh as Superintendent of mechanical equipment.

Mr. Holleran is native to the Pittsburgh area. He is a graduate of the Central Catholic High School, and he has studied Mechanical Engineering at the University of Pitts-

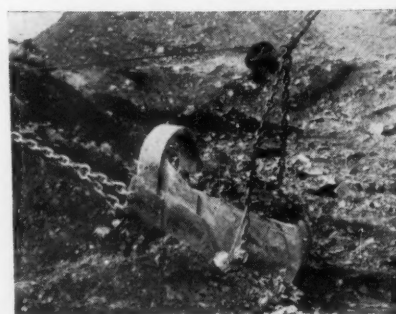
burgh. Mr. Holleran was with the Air Force in World War II as a B-24 Bomber Pilot.

Mr. Holleran will supervise the expansion of the A. T. Green Machinery Company's service facilities, which will include a new shop building of 5000 square feet area with heavy duty overhead crane.

The association of Mr. Holleran coupled with the enlarge service facilities will enable the A. T. Green Machinery Company to better handle the requirements of selling and servicing such accounts as LeTourneau-Westinghouse (Division of Westinghouse Air Brake), P & H Shovels and Cranes, Cleveland Trenchers, Adams Graders, Grove Hydraulic Cranes, and several others.

● The Page Engineering Company, specialists in Dragline Equipment, takes great pleasure in announcing the latest, most outstanding development in dragline digging equipment since the introduction of the Page AUTOMATIC Dragline Bucket — the new DUAL HITCH, the all-purpose bucket that provides the operator of any dragline machine with the ultimate in digging equipment that far surpasses any dragline bucket ever manufactured. This bucket can be readily adjusted in a matter of minutes to dig at any desired depth above or below the fairlead with the same degree of uniform digging efficiency and capacity.

Page DUAL HITCH AUTOMATIC Dragline Buckets are available in any size to meet the particular job requirements. PAGE ENGINEERING COMPANY, Clearing Post Office, Chicago 38, Illinois.



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THE NEW CATERPILLAR 630 and 631 TRACTOR-SCRAPERS

FEATURING CATERPILLAR'S
Power Shift Transmission
THAT ADJUSTS ITSELF
TO JOB CONDITIONS

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631 Series A

Here They Are:

ALL NEW

2 and 4 wheel TRACTORS

They're the newest members in the Cat wheel Tractor line—the 630 and 631:
•New 420 HP Cat Engine •New Cat power shift transmission •New planetary final drives •New air actuated cable control •New 29.5x35 tires •New 28 cu. yd. heaped Lowbowl Scrapers. Each component is Caterpillar *designed expressly* for these new earthmovers—and backed by our parts and service organization.

We've seen them at work—weighed the loads—timed them and figured costs. *We can promise you this:* these new Cat rigs are going to set new standards for the earthmoving industry!

These newest Cat wheel Tractor-Scrapers combine the maximum in machine efficiency—power—speed—service accessibility—operator convenience—stability—to give you greater productivity—low final costs.

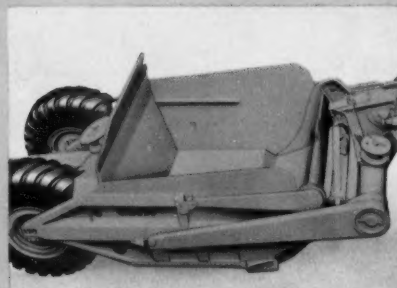
The broadened Caterpillar wheel Tractor family now includes: the new 4-wheel Cat 630 and the new 2-wheel Cat 631, as well as the popular DW20, DW21 and 619.

630 Series A

EVERY COMPONENT DESIGNED EXPRESSLY FOR THESE NEW CAT EARTHMOVERS...

All New 29.5 x 35 Tires—Designed for the 630 and 631. Provide the best combination of low operating costs, capacity, long life and good ride qualities.

Live Power Cable Control—driven directly from the engine. Provides power whenever the engine is running. Air-actuated control cuts operator effort in half. Improved cable saver prevents breakage due to double blocking.



New, Matched Scrapers—New Cat Scrapers are matched for the job at hand. 630 and 631 scrapers have a capacity of 28 cu. yd. heaped (21 cu. yd. struck). Also available for long favorable hauls with the 630 is the 482 Series C Scraper, heaped capacity 35 cu. yd., struck 27 cu. yd. Matched trailed units from Athey Products Corporation are also available.

CATERPILLAR

9 SPEEDS WITH JUST THREE SHIFTS

**Cat power shift transmission
matches power to the job**

Gone are the clutch pedal and straight stick—replaced by a speed selector lever and a shifting indicator to tell you when to shift! Simply move the selector to any one of the three forward range positions, and you automatically get three more speeds—for a total of nine forward speeds!

Secret of this entirely new concept is a torque divider transmission engineered specifically for the 630 and 631. It *automatically* combines the economy and efficiency of direct drive and overdrive with the torque multiplication and anti-stall characteristics of the torque converter.

Within each speed range, each of three types of drives—torque divider drive, direct drive, overdrive—is automatically put into action as job conditions demand.

Moving the selector lever to position 1, Cat power shift transmission starts in torque divider drive, which transmits torque 75% direct drive and 25% through the converter. As speed increases, the transmission *automatically* goes into direct drive. As the speed further increases, the transmission *automatically* shifts into overdrive.

When job conditions permit higher speeds, the shifting indicator on the dash tells the operator when to shift into second range. He simply moves the selector lever to position 2, and the automatic progression starts again—torque divider drive . . . direct drive . . . overdrive. This is repeated in third range. As job conditions vary, the power shift transmission automatically shifts up or down within its range, to match the job—perfectly!

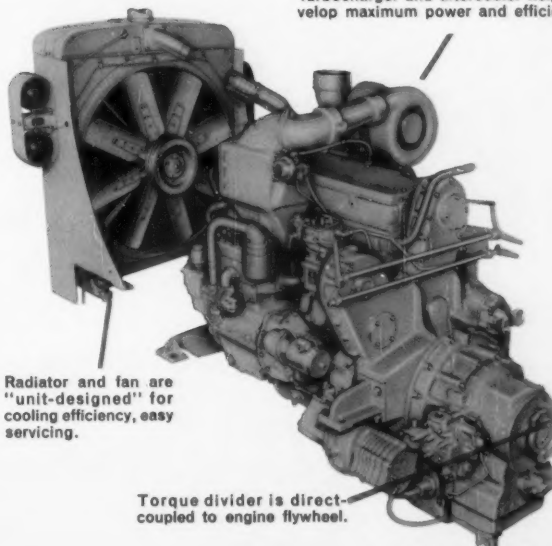
Moving the lever to "L"—load position—locks the transmission in torque divider drive for work in the cut. Selector lever can be locked in neutral position by a safety lever to prevent accidental engagement.

NEW 420 HP CAT TURBO-AFTERCOOLED ENGINE

Tailored to power needs

The 630 and 631 Tractors are powered by an all-new Cat D343 Engine with pressure ratio controlled turbocharger and aftercooler, developing 420 maximum HP (335 fly-wheel HP). The new engine and Cat power shift transmission perfectly complement each other, providing maximum usable horsepower. This power plant has many features new to the earthmoving industry: *Parallel porting provides straight-across breathing*—dual intake and exhaust valves assure better air fuel mixture, increased combustion efficiency, more horsepower per pound of fuel • *Overhead camshaft—no rocker arms or push rods—eliminates "valve float" at high RPM, gives smoother operation, greater economy at all speeds* • *Shelf head-design provides better cooling* • *Radiator and fan are an integrated unit, separate from the engine—provides greater cooling efficiency* • *Turbo-aftercooled design packs more air into engine, gets maximum horsepower from the fuel.*

Turbocharger and aftercooler help develop maximum power and efficiency.



Radiator and fan are "unit-designed" for cooling efficiency, easy servicing.

Torque divider is direct-coupled to engine flywheel.

NOW

Look at these other features!

You've seen only a few of the features the all new 630 and 631 Tractor-Scrapers will bring to your job. There are a great many more we'd like to show you:

- **Unit construction**—engine, torque divider transmission, range transmission, final drives, rear axles can be removed individually without disturbing adjacent components. This assures fast, low-cost servicing, high availability.
- **Accessibility**—swing-away dash on 631 provides easy access to entire left side of engine and other components. 631 crankcase guard pivots down for easy access to underside of engine. Rear fenders on 630 tip forward and the 631 fenders are simply unbolted and lifted off for easier tire removal.
- **New steering system**—new 2-jack steering with follow-up linkage on 631 retains the "feel" of the road. Improved steering for 630 provides easier handling in tight quarters.
- **Operating ease**—air actuated cable controls cut operator effort in half. Other features include steps on either side for easy servicing; roomy, uncluttered



operator compartment; four headlights for night work.

- **Smooth ride, more comfort, safety**—new units can operate at higher speeds over rougher hauls than other rigs—the result of proper tire selection, a new "harmonic" concept in tractor-scraper relationship plus the Torsion-flex seat.

Once you see these new earthmovers in action, you'll agree that they are worthy additions to the long-accepted line of Caterpillar Tractor-Scrapers! We'll be glad to show you how they fit into your earthmoving spread along with the other Cat wheel units: The DW20 and DW21—345 HP (maximum) and the 619—225 HP (maximum), both with direct drive transmission. Call us today!

FOR THE NEWEST IN EARTHMOVERS, LOOK TO

CATERPILLAR

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OHIO MACHINERY CO.

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U.S. Route 250, Cadiz, Ohio
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WALKER MACHINERY CO.

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4010 Emerson Ave., Route #2, Parkersburg, W. Va.

CM-12

FORM NO. DW-2614C

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WANT MORE FACTS? JUST ASK US!

We'll send more information to you—just fill out and send this coupon.

☐ 630 Catalog

☐ 631 Catalog

Name

Address

City State



The Euclid TC 12 tractor cleaning pit for the highwall auger at the Benezet operation.

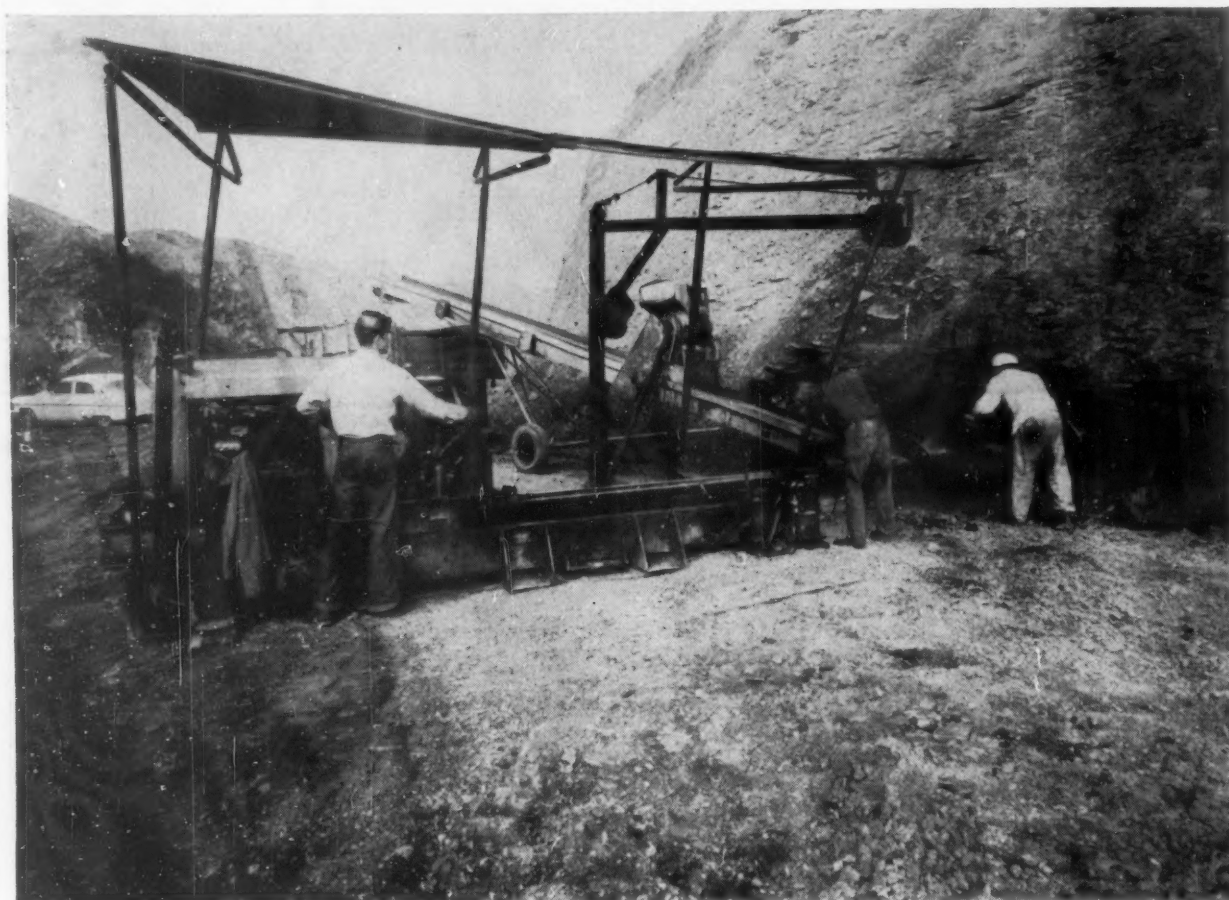
Stripping and Augering at the Benezet and Pennfield Operations of the P & N Coal Company

● The Benezet Pit of the P & N Coal Company is located at Benezet, Pennsylvania, in an area that has been deep mined near the extreme end of Northern Clearfield County. The upper Kittanning seam of coal runs 42 inches thick there and the stripping is carried out along the crop lines of the deep mines.

Stripping is done with a Manitowoc 4500 dragline and loading



Euclid TC-12 tractor stripping overburden at the Pennfield operation.



McCarthy Highwall Auger working in deep mined area at the Benezet operation.



Coal seam prepared for augering at the Pennfield operation.

with a Manitowoc 3,000 shovel. As a rule only one cut is made with the stripping unit as the underground workings areas cannot be judged due to irregularity in deep mining, so a McCarthy Highwall Auger is used to get the coal between the first strip cut and the deep workings.

At the Benezet operation a Euclid TC12 tractor is used to prepare the coal face for the Highwall Auger.

The Pennfield operation lies South of the Benezet operation, along a Forrest Preserve. Several mines of private road had to be built to reach that coal which runs about 32 inches thick. Here the coal seam is prepared with a Euclid TC-12 tractor and the seam is augered.

● Here's the almost magical drive that converts any power drill into a variable angle tool, drills in the tightest cramped quarters and literally reaches around corners, works safely and firmly at full power with no bulky gear-box to install or handle. It measures less than 6 inches overall and weighs approximately 12 ounces.



Gyro-Drive fits all models of power drills, $\frac{1}{4}$ inch or $\frac{1}{2}$ inch capacities, and may be permanently installed on the drill by requesting a special adaptor, priced at 29c or just attach the chuck with an additional chuck added at the operating end.

It is a precision tool made for heavy and steady duty, rigorously tested in actual practical service.

Gyro-Drive can be mounted directly into any drill spindle with $\frac{3}{8}$ inch x 24 male or female thread.

Removable hand grip bar is used when drilling in metal or masonry where extra pressure or control is needed.

Gyro-Drive is furnished with threaded sleeve permitting use of either $\frac{1}{4}$ inch or $\frac{1}{2}$ inch chuck.

The list price for the Gyro-Drive, model 101 is \$8.89. Thus it is a tool

well within the budget of any industry or individual. Gyro-Drive is being marketed by leading jobbers, retailers, or a mail order can be sent direct to: Glenwood Gyro-Drive, Inc., Glenwood, Minnesota.

Each tool is packed in an attractive display box with a descriptive die cut. An attractive die cut counter display and advertisement will be furnished upon request at no extra cost. It will be backed by an extensive advertising and sales aid program to acquaint the consumer with its many merits. We also are able to supply $\frac{1}{4}$ inch and $\frac{1}{2}$ inch

chucks.

The Gyro-Drive, model 201 is available for impact and socket wrenches, $\frac{3}{8}$ inch or $\frac{1}{2}$ inch drive, list price \$11.95, also for multiple drill heads and power take-off of tractors in connection with farm machinery such as field choppers, combines, swathers and all industrial uses where an universal joint is required.

For further information, illustrated catalog, and other data available from sales department, you may contact the Glenwood Gyro-Drive, Inc., Glenwood, Minnesota.



Burnwell Coal Co. of Lisbon, Ohio, carry on strip coal mining at Dun, Ohio. Shown handling overburden removal is the company's Manitowoc Model 3900 dragline. Despite the tough, rocky digging conditions encountered, the Manitowoc averaged 285 yards per hour. Once the coal vein is reached, the company then used a Manitowoc Model 2000 Shovel to load the coal into trucks.

● With the retirement of two veteran Ohio earthmoving equipment industrialists, new executive control has taken over Ohio Machinery Co., Caterpillar machinery dealer for eastern Ohio.

Harold N. Graves retired February 1 as chairman of the board of the dealership, Forrest W. Clemens as president. T. H. Taylor, former vice president and general sales manager, became president. Vice president and general sales manager of the new dealership is Charles G. Schmidt. All four men are from Cleveland, Ohio.

Graves' and Clemens' retirement ends a business association which started in 1930. The two founded Ohio Machinery Co. in 1945 after having worked together at the LaPlante Choate Company, where Graves was vice president and sales manager; Clemens, comptroller.

Taylor began his earthmoving industry career in 1929 as a district representative for Euclid Road Machinery Company. He became Euclid's eastern sales manager in 1936. In 1938, he joined Northwest Engineering as a special representative, leaving the next year to join the Caterpillar Dealer serving Ohio. He

became sales manager of Ohio Machinery Co. when that firm was named Caterpillar Dealer in 1945.

Schmidt was salesman for the Ohio Caterpillar Dealer for five years before Ohio Machinery Co. was formed. He was made a branch manager in 1948 and became vice president in 1957.

Ohio Machinery Co. headquarters are in Cleveland where key personnel are George Strickland treasurer; Ted Egan, secretary; and Pearl Giesy, manager of the parts and service departments. He will be backed by Howard Warden and Stan Janders. Jim Cooper heads local parts service, including the SWAP exchange plan. Branch stores are in Youngstown (where Bud Mattison, Roger Woodman and Jim Cable are familiar management, parts and service names) and in Cadiz where Bert Robinson is manager, Harold Hursey is service manager and Larry Cockrell is parts manager.

Ohio Machinery Co. will continue to merchandise the entire Caterpillar line: track-type tractors, wheel tractors, scrapers, traxcavators, front end loaders, motor graders, pipelayers with a full line of attachments for each.

In addition Athey haulers, Balderson blades, Fleco clearing tools, Hyster winches and backhoes, Kelley rippers, Martin trailers, Preco automatic grading devices, Rome discs and harrows, Ulrich motor grader attachments, Union wire rope, and other miscellaneous earthmoving accessories will be handled.

● A new two-piece quick change pinning device for securing tips on No. 8 and No. 9 Rippers can be installed or removed within one minute, using only simple hand tools, Caterpillar Tractor Co. has announced.



New two-piece quick change pinning device for Cat No. 8 and No. 9 Rippers with locking effect can be installed or removed within one minute. Pins are installed or removed one at a time to insure extreme wedging action inherent in design.

In addition to the ease and simplicity of installation and removal, the new pins are virtually unbreakable, having more than twice the strength of previous rivets. The high strength results from through-hardening of the alloy steel forgings.

Each pin, circular in diameter, is bent slightly at the center to achieve the locking effect and is flanged at each end. Pins install back-to-back. Because of the inherent wedging action, they are installed or removed only one at a time.

The new units will fit all Caterpillar Ripper shanks now in the field. However, new tips with elongated holes are required for these pins and are introduced concurrently.

The pins, an exclusive Caterpillar development, are covered by patent applications on file in the United States and other countries.



Signing the agreement that created the new Ohio Machinery Co. are (left to right) Charles G. Schmidt, vice president of the dealership; K. F. Ames, Central Division sales manager of Caterpillar Tractor Co.; and T. H. Taylor, new dealer President.



▲ Allis-Chalmers TL-20 dumps right in center of truck.

Extra r-e-a-c-h makes the difference! The **ALLIS-CHALMERS** TL-20 has it!

With the Allis-Chalmers TL-20, you can dump loads right in the center of high-body trucks.

Why? Because, by comparison with other tractor loaders, *the TL-20 has at least an extra foot of reach.*

This saves valuable seconds on work cycles . . . gives you fast, even dumping. It eliminates necessity for time-consuming loading from both sides. No pitching. No time lost in dozing to distribute load evenly. No banging of truck and loader.

And, no TL-20, sold by Highway, has ever had an engine failure, lost a torque converter . . . or experienced a brake failure. This represents competitive operating advantages that will give you extra production at reduced cost.

A-3766A



Highway

HIGHWAY EQUIPMENT COMPANY

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▲ Every load's a heaping one! Easier loading, less spillage, greater operator comfort are outstanding TL-20 features.



▲ The TL-20's faster shifting speeds loading. One lever controls both forward-reverse and all speeds.

SERVICE . . . Regular hours—8 a.m. to 3 a.m. daily. Open 24 hours for emergency work . . .
87 factory-trained mechanics . . . 32 traveling service trucks . . . 23,800 different parts in stock.

"OFF WITH HIS HEAD"

(Continued from page 7)

nearby store a saleslady was showing a customer an expensive piece of crystal; she dropped it on the floor where it shattered. In an office a bookkeeper punched the wrong row of keys on an adding machine and made a mistake it took an hour to find later in the day. It's well to certain no such incident contributed to any individual mistake or error we have under investigation for even the best of us can go wrong wrong when such a thing happens.

Look Into the Individual's Personal Problems — This is not easy to do but in many instances the ac-

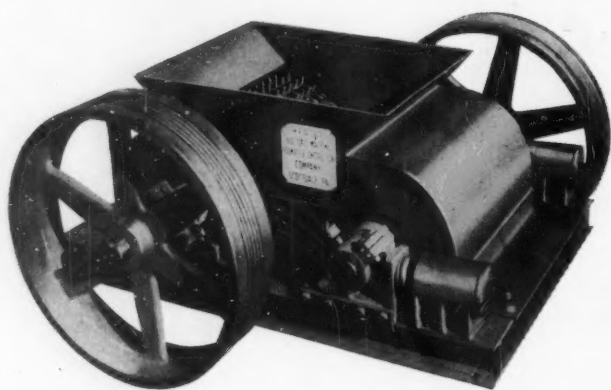
tual cause of the error was something in the employee's personal life. Few of us can leave such personal problems at home when we go to work. Any employee obviously working under such stress needs help and if we can give it to him before the accident or mistake occurs it will repay the vigilance we give toward spotting such troubles with the men who work for us.

Sometimes mistakes and errors follow definite patterns and when these occur it takes only a little sleuthing on our part to discover and correct the cause. But more often each such employee mistake or error was caused by an individual

set of circumstances. If we value the men we now have on our staff it is well worth while to search for these before we follow the example of the Queen of Hearts and yell, "Off With His Head!"

● A new, one-man, self-propelled, self-contained, hydraulically operated, highly versatile Model H. D. 250-S HI-VACuum rotary drilling rig has been built by the HOUSTON TOOL COMPANY of Santa Susana, California. It operates on a 30 H.P., 4-cylinder, air-cooled engine with four speeds forward and one reverse.

SCOTTTDALE DOUBLE ROLL CRUSHERS



ECONOMICAL - takes less power

EFFICIENT - more uniform product

The powerful chilled cast iron double rolls of the 63 special are covered with hundreds of steel teeth which speedily bite, chew and shred the coal to any wanted size from $\frac{3}{4}$ " to 8" ... fines are held to a low minimum.

This 2 motor drive machine has gears but is equipped with 2 easily

maintained grooved flywheels. One welded steel hopper is mounted on a 46" x 65" welded steel base. Weighing only 4800 pounds and powered with 2—10 H. P. motors the crusher has a top speed of 150 RPM's with a capacity of 60 to 250 tons per hour. Comes with bronze bushed journal bearings.

Send for literature.

SCOTTTDALE MACHINE, FOUNDRY & CONSTRUCTION CO.

DEPT. CM

BOX 51

SCOTTTDALE, PA.

GUYAN MACHINERY CO., Logan, W. Va. stock SCOTTTDALE CRUSHERS



Hydraulically steered, it is very maneuverable and the driving controls are immediately adjacent to the drilling controls with a swing-away seat for the driver-operator that affords excellent driving and drilling vision.

The rig has a tongue and hitch and the hydraulic system is made inoperative (neutralized) by a single simple valve for easy highway towing. In addition to 4-wheel hydraulic brakes, there is a hand-operated, mechanical parking brake.

Carrying all of its own equipment and tools — plus 250 feet of drill pipe — this unit is completely self-sustaining. This Model H. D. 250-S is one of the larger developments of the Houston HI-VACuum Drilling Systems which has established a world-wide reputation for dependable 100% true sampling by vacuum

drilling (The Mighty Midget).

Twin, clear plastic tubes provide a continuous examination of the stratum being drilled and make grab samples easy without interrupting drilling. By use of a plastic bag interliner, inch-by-inch samples may be taken and retained for analysis, shipment and storage.

In addition to vacuum drilling (which requires no water in dry formations, takes a 100% continuous sample, and cannot lose circulation even in broken and fissured formations) the Model H. D. 250-S drills with forced air; with forced water; with reverse water; vacuum with water; drive core sampling; augering; diamond core drilling with vacuum, with forced water; bucket drilling; and can also drive casing while drilling.

This most versatile drill is rated 2 $\frac{3}{8}$ inch to 3 inch diameter hole to 250 feet. It drills at any angle and in all formations. The HI-VACuum system of cuttings recovery and reliable sampling has been the decisive factor in developing many important properties. For further information wire, write or phone HOUSTON TOOL COMPANY, P. O. Box 251, Phone Fireside 6-1114, Santa Susana, California.

● Features of the recently introduced Allis-Chalmers Models 10000 and 11000 diesel engines are described by the illustrated text matter of the new two-color, eight-page catalog (BU-718) now available from the Allis-Chalmers Mfg. Co., Engine-Material Handling Division, Milwaukee, Wis. Performance curves and charts, and illustrations, including cutaways of important components, are included to explain "A New Kind of Diesel Work Power" provided by these two new engines in the 100-210 hp class.



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WIRE ROPE · SLINGS · WIRE ROPE ASSEMBLIES

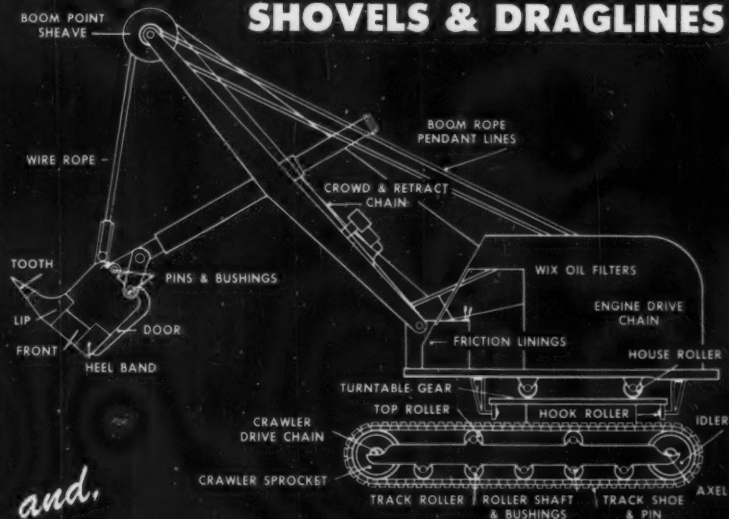


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Made to Withstand High Drilling Speed Whip And Torsional Strain Of Electric Drills.



Drills holes faster — Will not snap off shank or chip points — Outlasts four or five ordinary augers.

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THERE'S NO PARTY SPLIT HERE IT'S J. T. FISH FOR '61

The Coal Producer's Choice all the Way.

JOY EQUIPMENT—REBUILT

- 3—Joy 14BU 9AE Super Loaders — 26" Hi — New 1955.
- 3—Joy 14BU Loaders, low pedestal, 7AE, 1956 & 57.
- 6—Joy 14BU Loaders, medium pedestal, 7RBE.
- 1—Joy 14BU 7CE High pedestal loader.
- 4—Joy 14BU 3PE Loaders.
- 2—Joy 12BU Joy Loaders complete with Piggy-backs.
- 2—Joy 12BU Loaders, 9E latest type 250 V. DC.
- 3—Joy 12BU Loaders, 220/440 Volt AC.
- 1—Joy 20BU Loader, latest type.
- 1—Joy 11BU Loaders, latest type.
- 1—Joy 8BU Loader, 31" overall height.
- 2—Joy 8BU Loaders, 220 V. AC.
- 1—Joy curved Bar Head for 14BU, complete.
- 6—Reliance 24-J Motors, 7½ H.P.
- 4—Reliance 38-J Motors, 10 H.P.
- 4—Reliance 40J 15 H.P. Motors.
- 20—9-J Motors, 4 H.P.

- 2—Goodman 660 Loaders on Crawlers, 440 V. AC. like new.
- 1—Goodman 665 Loader on Crawlers, latest type 250 V. DC.
- 1—Goodman 865 Loader, 26" hi. Rebuilt. 250 V. DC.
- 1—Goodman 660 Loader on Crawlers, excellent 250 V. DC.
- 4—Joy 8SC Shuttle Cars, rebuilt.
- 1—Joy 6SC Shuttle Cars, rebuilt, latest type
- 1—Joy 5SC Shuttle Cars, Excellent.
- 2—Joy 32ES Shuttle Cars.
- 2—Joy 32E10 Shuttle Cars, rebuilt.
- 1—Joy 32E15 Shuttle Cars, rebuilt.
- 4—Joy 32E16 Shuttle Cars, rebuilt.
- 10—Joy 42E16 Shuttle Cars, rebuilt.
- 1—Joy CD-22 Drills, on rubber, like new.
- 6—Joy T-2-5 low pan Crawler Trucks, rebuilt.
- 1—Joy T-2-6 low pan Crawler Truck with reel.
- 2—Joy T-1, Standard Crawler Trucks, 220 AC.
- 1—Joy T-1 Standard Crawler Truck, 250 DC.
- 4—Joy 11-B Cutting Mach., like new, 35 & 50 HP.
- 1—Joy 7-B Cutting Mach., like new, 250 V. DC.
- 2—Goodman 212 Cutting Machines, 19" high.
- 1—Goodman 312 Cutting Machine, 17" high.
- 3—Goodman 412 Cutting Machines, 19" high.
- 1—Goodman Machine on Crawler, 31" high. All hydraulic.
- 6—Goodman 512 Machines with Bugdusters.
- 6—Goodman 612 Cutting Machines, 250 & 500 volt.
- 1—Jeffrey 70 URB rubber tired Cutter. Universal head, perfect condition.
- 1—Goodman 2410 Rubber Tired Cutter, Universal head, like new.
- 3—Joy 11RU Rubber Tired Cutters, with bugdusters. Universal heads, dual tires, like new. 250 V. DC.
- 1—Joy 10RU Rubber Tired Cutter, Universal head, 220/440 V. AC. Perfect
- 4—Joy 10RU Rubber Tired Cutters, Universal head, 250 V. DC. Rebuilt or as is.
- 6—7AU's on track, Universal head.
- 2—Jeffrey 29UC Cutting Machines. Universal head, cuts anywhere in seam, 38" high, on Crawlers, 250 volt D.C.
- 1—Jeffrey 29LC on Crawlers, rebuilt.

LOCOMOTIVES

- 1—Goodman 6 ton, 93-A, 27" high, armor plate frame.
- 1—Jeffrey 15 ton MH-77 locomotive, armor plate frame.
- 3—Jeffrey, 13 ton, type MH-110, 36", 42", 44" ga.
- 2—Jeffrey 10 ton, type MH-110, 42" and 44" ga.
- 2—Jeffrey, 10 ton, type MH-78, 42" and 44" ga.
- 2—Goodman 8-30 and 10-30 Locos., 26" above rail.
- 1—Jeffrey MH-150, 6 ton, 26" overall height, rebuilt with reel.
- 12—Jeffrey, 6 ton, type MH-88, 42", 44" and 48" ga.
- 4—Jeffrey, 8 ton, type MH-100 2½" armor plate frames.
- 3—Jeffrey, 4 ton, type MH-96, 42", 44" and 48" ga.
- 1—G.E., 4 ton, type 825 Locomotive, 22" high.
- 10—G.E., 6 ton, types 801, 803, 821 Locomotives. 42", 44" and 48" ga.
- 1—G.E., 8 ton, type 822 Locomotive, 44" ga.
- 3—G.E., 10 ton, type 809 Locomotives, 42", 44" and 48" ga.
- 2—G.E. 13 ton, type 829 Locomotives, armor plate frames.
- 1—Goodman 91A Locomotive, 8 ton, 26" overall height.
- 2—Goodman, type 33, 6 ton, 44" and 48" ga.
- 3—Westinghouse type 902, 4 ton, 42" and 48" ga.
- 2—Atlas Battery Locomotives, 36" ga.
- 1—Atlas Trolley Locomotive, 4 ton, 24" high.
- 2—Westinghouse, type 904, 6 ton, 44" and 48" ga.
- 2—Westinghouse, type 906, 44" and 48" ga.
- 2—Westinghouse, type 907, 10 ton, 44" and 48" ga.

- 3—Westinghouse 908, 13 ton, Locomotives, 42" and 48" ga.
- 8—Jeffrey MH-78 Locomotive Units, cheap.
- 4—Jeffrey MH-88 Locomotive Units, real bargains.
- 6—Jeffrey MH-100 Locomotive Units, reasonable.
- 3—Plymouth Diesel Locomotives, 8 and 10 tons, 42" and 44" ga.

Locomotive Trucks & Spare Armatures for the above.

TIPPLE EQUIPMENT

- 1—All Steel 5 Track Tipple, new 1957, complete with washer, silo, oil treating system, all bolted construction.
- 1—Complete Five Track Tipple with Washers and Air Tables.
- 1—Complete stoker plant, all steel.
- 2—Complete Tipples, 3 & 5 track, steel and wood.
- 3—Cleaning Plants, 1 ea. McNally, Roberts and Schaefer, Jeffrey Washers and Air-Flo Tables.
- 4—Complete Aerial Trams for coal or refuse.
- 3—Complete Rope and Button Lines.
- 2—Monitor Lines complete with Drums, excel.
- 1—Allis-Chalmers 5 x 12 Rippflo Vibrator.
- 1—Allis-Chalmers 4 x 12 Low-Head Vibrator.
- 1—Robins Gyrex Vibrator, 4 x 10.
- 10—Belt and Apron type Loading Booms.
- 6—Shaker Screens.
- 1—Robins Car Shakeout.
- 1—Gundlach Crusher, like new.
- 20—Crushers, various sizes—Jeffrey, McLanahan & McNally.
- 4—Mine Scales, 10 & 20 ton.
- 3—Truck Scales, 25 to 40 ton, late type.

Feeders, Belt and Drag Conveyors, Car Retarders.

CUTTING MACHINES

- 1—Joy 10RU Rubber Tired Cutter, Universal head, 220/440 volt AC. Perfect.
- 3—Joy 10RU Rubber Tired Cutters, Universal head, 250 V. DC, as is or rebuilt.
- 2—Joy 11RU Rubber Tired Cutters, 250 V. DC.
- 1—Goodman 2410 Rubber Tired Cutter. Universal head, new 1956. Excellent.
- 2—Jeffrey 29UC Universal Machines on Crawlers
- 1—Goodman on Crawlers, 31" overall height.
- 3—Baby Goodman 212's, rebuilt. 250 V. D. C.
- 4—Goodman 312 Cutting Machines, 17" high.
- 3—Goodman 412 Cutting Machines, 19" high.
- 6—Goodman 512's with Bugdusters, like new.
- 4—Goodman 512's, rebuilt, or as removed from service.
- 6—Goodman 612's—250 & 500 Volt A. C.
- 3—Goodman 112's, 220/440 Volt A. C.
- 1—Joy 7-B Cutting Machine, 250 Volt D. C.
- 4—Joy 11B Cutting Machines, rebuilt, 35 & 50 H. P.
- 6—7AU's, on track, Universal head.
- 10—Goodman 12AA's and 112AA's, 220 V. D. C.
- 2—Goodman 324 Slabbers.
- 2—Goodman 724 Slabbers.
- 2—Goodman 824 Slabbers.
- 6—Jeffrey 35L's, like new, 250 V. D. C. 17" high.
- 2—Jeffrey 35L's, on low vein trucks.
- 2—Jeffrey 35L's, 220/440 A. C.
- 3—Jeffrey 35BB's 220/440 A. C.
- 15—Jeffrey 35B's and 35BB's 250 V. D. C.
- 2—Jeffrey 29B's on track.
- 10—Jeffrey 29C's track mounted.
- 2—Jeffrey 29L's, on Crawlers. Excellent.
- 4—Sullivan CE7, 220/440 V. AC.

CONVEYORS

- 2—Goodman 97HC 30" & 36" Rope Belts, 1600' perfect with or without rubber.
- 2—Jeffrey 52-B tandem drive 30" Belt Conveyors 1,500'.
- 1—Jeffrey 52-B tandem drive 26" Belt Conveyor.
- 1—Joy 30" Underground Belt Conveyor. Excell.
- 1—Goodman 97-C. 30" tandem drive.
- 1—Goodman 97-C. 26" Conveyor, 1,000 long.
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- 4,000' Conveyor Belt, 36".
- 5,000' Conveyor Belt, 30".
- 6,000' Conveyor Belt, 26".
- 8—Jeffrey 61AM 12" Chain Conveyors, 300'.
- 2—61EW Elevating Conveyors.
- 2—61WH 15" Room Conveyors, 300'.
- 2—Joy 15" Room Conveyors, 300'.
- 2—Joy 20" Conveyors, 300'.
- 4—Joy Ladell UN-17 Shakers.
- 10—Goodman G-12½ and G-15 Shakers.
- 1,000' Goodman 18" Flat Belt Conveyors, tandem drive any length, Perfect.

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- 2—500KW G. E. Stationary Rectifiers.
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- 2—100KW. G. E. TCC-6's, 275 V., Rotary Converter.
- 1—150KW. G. E. HCC-6 275 V., Rotary Converters.

- 1—150KW. 6 phase. Allis-Chalmers Rotary Converters, 275 V. D. C.
- 2—200KW G. E. HCC-6's, Rotary Converters, 275 V. D. C. Steel frames, Newly rewound.
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- 2—300KW Westinghouse, 6 phase, Rotary Converters, 275 V. D. C.
- 2—500KW West. Rotary Converters, 275 V. D. C. Perfect.
- 2—200KW Westinghouse Rotary Converters, 275 V. D. C. Newly Rewound. (All the above with 6900/13000 and/or 2300 /4000 primary transformers).
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- 2—150KW MG Sets, G.E. and West., 275 V. D.C.
- 1—200KW MG Set, rebuilt, 275 V. D. C.
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- 2—300KW G.E. MG Sets, like new.
- 1—300KW West. 600 volt MG Set, rebuilt.
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- 2—500KW Westinghouse, 600 volt, D.C., 6 phase, Rotary Converters.
- 2—500KW HCC-6's, Rotary Converters, 6 phase, 600 V. D. C.
- 1—GMC-471 Diesel with 60KW, 250 V. D. C. Gen.
- 3—GMC-671 Diesels with 75 & 110KW, 250 V. DC, Gen.

LOADING MACHINES

- 16—Joy Loaders, 14BU, 12BU, 8BU, 11BU, 20BU.
- 5—Joy 12BU9E Loaders, 220/440 V. A. C. Excellent.
- 3—Joy 12BU9E Loaders, latest type.
- 2—Joy 12BU with Piggyback Conveyors.
- 2—Goodman 865 Loaders, 26", on crawlers.
- 1—Goodman 665 Loader, on Crawlers, rebuilt.
- 2—Goodman 660 Loaders, 440 V. A. C. perfect.
- 1—Goodman 660 Loader, on Crawlers, 250 V. DC.
- 1—Goodman 460, on track, rebuilt, all hydraulic.
- 2—Jeffrey 61 CLR's on rubber, 26".
- 2—Jeffrey L-500 Loaders.
- 2—Myers Whaley, No. 3 Automatic Loaders.
- 2—Clarkson Loaders, 26" above rail.

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- 150 Tons Copper—4/0 and 9 Section Trolley 1/0, 2/0, 4/0 Stranded, 500 MCM, 750 MCM, 1,000,000 MCM Insulated.
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- 5—Complete Tipples, 3 to 5 Track. Wood and Steel.
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- All Steel Armo Buildings.
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- 1—¾ Yard Crawler Crane.
- Battery Supply Tractors, Rubber Tired.
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- 2—Joy self-propelled rubber tired comp., 240 cu. ft.
- 2—Acme self-propelled rubber tired compressors, 130 cu. ft.
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- 1—Differential 40 passenger Man-Trip car.
- 6—MSA Rock Dusters.
- 2—Phillips Carriers, 44" and 48" ga.
- 1—Barber-Greene self-propelled Bucket Elevator. Pipe, Plastic, Steel Transit, all sizes 1" to 6".
- 25,000 Roof Bolts, all types.
- 300—Mine Cars, drop bottom, 42" ga.
- 90—Mine Cars, drop bottom, 44" ga.
- 50—Mine Cars, drop bottom 48" ga.
- 100—Mine Cars, 18" high, end dump, 44" ga.
- 300—Mine Cars, end dump and drop bottom, 26" high, 48" ga.
- 1—10 ton Mine Car Scale with Recorder.
- 4—Brown Fayro 15 HP latat type Hoists.
- 15—Brown Fayro HKL and HG Car Spotters.
- 1—Brown Fayro Hydraulic Car Spotter.
- 1—12 ton Differential Slate Larry.
- Incline Hoists, 25 to 50 H. P.
- 1—Jeffrey 5', 6' and 8', Like New, Aerodyne Fan
- 2—Storage Tanks, 4,000 Gallons.
- 2—Storage Tanks, 10,000 Gallons.
- 500 MCM, 750 MCM 1000 MCM Bare & Insulated.
- 10,000 Five Gallon G. I. Cans, screw lids.
- 2,500 tons Relaying Rail, 25 lb., 30lb., 40lb., 50lb., 60lb., 70lb.
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• Water stemming, with the resulting improvement in the safety and efficiency of conventional explosives, constitutes an important and recognised development in blasting technique. Hitherto the main difficulty has been that of introducing water quickly, cheaply and efficiently. This problem has now been overcome through the introduction of the "Fabron" Self-Sealing Stemming Bag.

This new invention consists of a length of flexible, tough, flame-retardant plastic tubing, sealed at one end and with a patented self-sealing valve at the other. A simple filling apparatus designed to ensure an even flow of water is the only requirement to produce a 15-inch length of rigid, easy-to-handle water stemming and this action requires 10 seconds to perform. The filling machine is controlled by a foot pedal leaving the hands free.

When using Fabron Self-Sealing Bags as stemming material the suggested order of insertion into the shot hole is:

1. A plug of normal stemming and/or a water-filled bag
2. The explosive charge
3. A water-filled bag or bags
4. Sand-clay or other suitable stemming material

With this method of stemming, shot firing follows its normal procedure.

The improved blasting efficiency afforded when using Fabron Self-Sealing Stemming Bags permits shot holes to be drilled further apart than would be required with normal stemming; alternatively, the weight of the charge may be reduced by approximately 20%. Tests by the United Kingdom National Coal Board using self-sealing stemming in coal mines have shown a 40% reduction in the amount of explosive required.

Water stemming with Fabron Self-Sealing Bags results in a appreciable reduction in the density of the visible dust cloud raised and of fumes from the explosive. Screening tests in coal mines indicate a 3% to 4% increase in coal exceeding 2" in size.

To ease handling, Fabron Self-Sealing Stemming Bags are produced in strips of 40 which pull apart for use.

Available from B.E.P. Industrial Equipment, 6346 West McNichols, Detroit 21, Michigan.

• Blood transfusions from recovered burn victims help those who are severely burned.

This method of treatment was used for nine children burned in the 1958 Our Lady of the Angels school fire in Chicago and proved beneficial, three Chicago scientists reported in the Journal of the American Medical Association.

The treatment is based on the premise that burn releases a toxin, or poisonous substance, into the blood stream and that the blood of a person who has recovered from such a burn contains an antitoxic-like substance. Study of the method was reported by Dr. Sol R. Rosenthal, Dr. James B. Hartney and Wilma A. Spurrier.

They said their finding should be considered "preliminary" because the total effect of transfusing blood from a recovered burn victim has not yet been determined.

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621-S Page Diesel Drag. 125', 7 yd.
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111-M Marion Drag. 100', 4 yd.
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3900, 3500 & 3000 Manitowoc Cranes
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170-B B.E. 6 yd. Elec. Shovel
4161 Marion 6 yd. Elec. Shovel
2400 Lima 6 yd. Std. & H.L. Shovels
120-B B.E. & 4121 Marion 4 yd. Elec. Shovels
4500 Manitowoc 5 yd. H.L. Shovel
1055 P&H 3 yd. H.L. Shovel
1201 Lima 3½ yd. Standard Shovel
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Why not get the complete story on the *sensational* Model 4500 VICON today? Your nearby Manitowoc distributor has all the facts.

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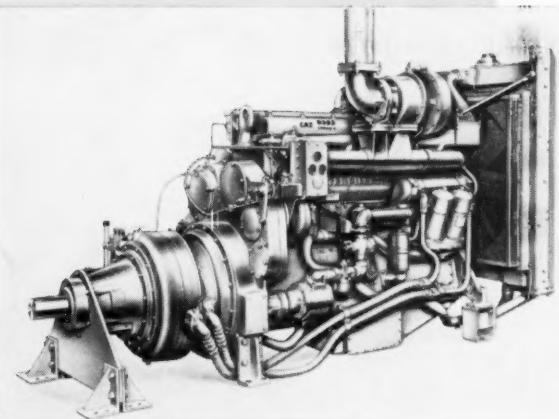
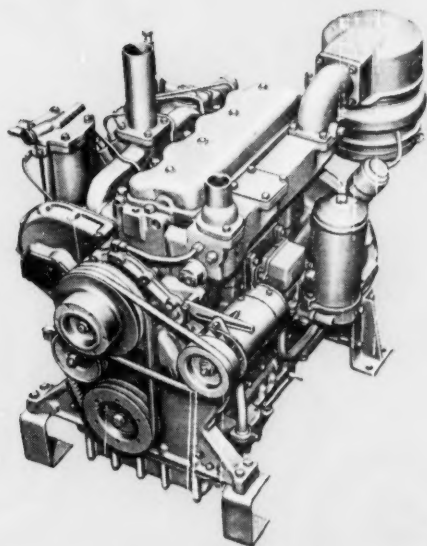
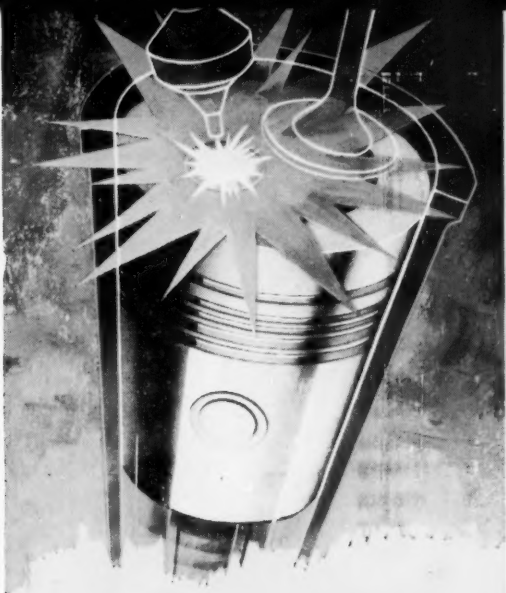
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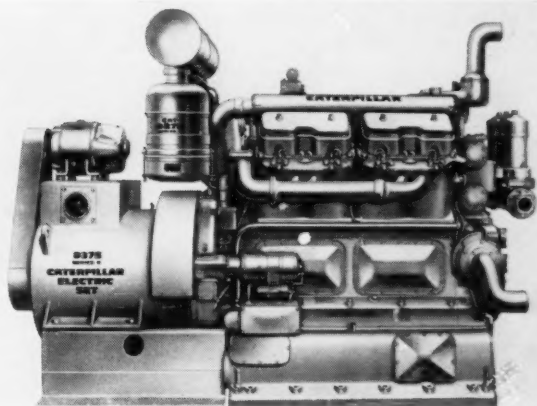
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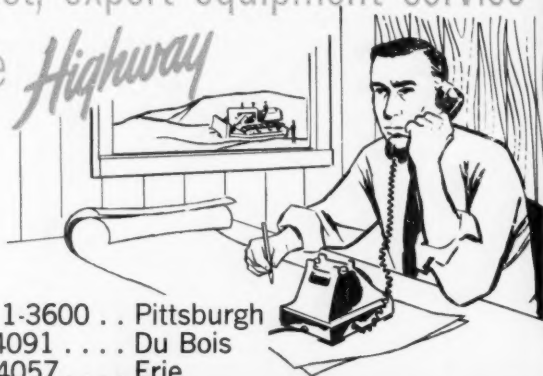
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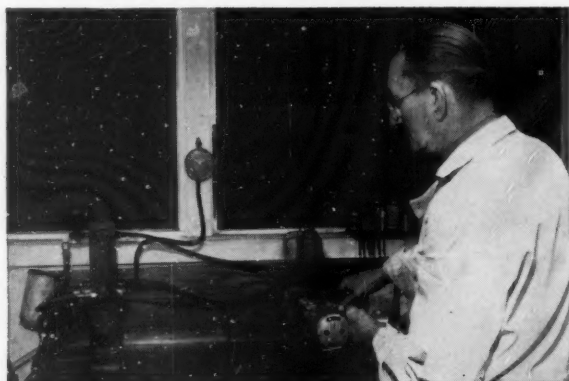
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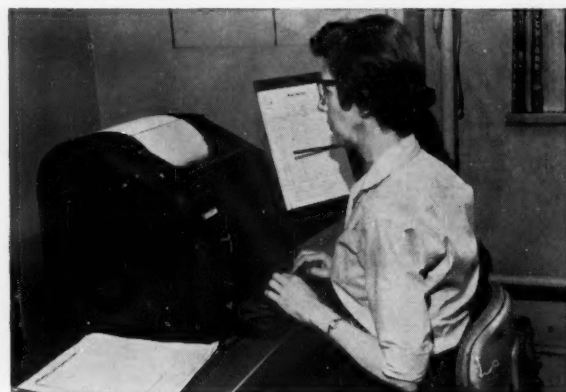
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